DOCUMENT RESUME

ED 257 815 SP 026 158

AUTHOR	Henley, Martin
TITLE	Teaching Mildly Retarded Children in the Regular Classroom. Fastback 220.
INSTITUTION	Phi Delta Kappa Educational Foundation, Bloomington, Ind.
REPORT NO	ISBN-0-87367-220-8
PUB DATE	85
NOTE	48p.; Publication of this fastback sponsored by the West Georgia College Chapter of Phi Delta Kappa.
AVAILABLE FROM	Phi Delta Kappa, Eighth and Union, Box 789, Bloomington, IN 47402 ($0.75).
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Educational Diagnosis; Elementary Secondary Education; Learning Disabilities; *Mainstreaming; *Mild Mental Retardation; *Student Evaluation; *Student Needs; Teacher Student Relationship; *Teaching Methods

ABSTRACT

Although mild retardation is generally assumed to be an inherited trait, socio-cultural factors, such as deprived cultural environment, health-threatening conditions, and school labeling processes exacerbate the problems of the learning disabled child. In this booklet, the causes of mental retardation are considered, and techniques and strategies are recommended for teaching the mildly retarded child in the regular classroom. Suggestions are made for effectively diagnosing individual difficulties and assessing the needs of the student. Teaching strategies are described that have proved effective with mildly retarded children. Case studies are presented illustrating how these strategies were used to develop the potentials inherent in four different learning disabled students. (JD)

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Teaching Mildly Retarded Children in the Regular Classroom

Martin Henley

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PHI DELTA KAPPA EDUCATIONAL FOUNDATION

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The author dedicates this fastback to his wife, Carol Louise, for her support and encouragement.

Series Editor, Derek L. Burleson

Teaching Mildly Retarded Children in the Regular Classroom

by
Martin Henley

Library of Congress Catalog Card Number 84-62990
ISBN 0-87367-220-8
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Bloomington, Indiana

This fastback is sponsored by the West Georgia College Chapter of Phi Delta Kappa, which made a generous contribution toward publication costs.

The chapter sponsors this fastback in appreciation of Elizabeth B. Thornton, Area 7J Coordinator, for her guidance and support.

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Introduction

The mildly mentally retarded child has been the ugly duckling of American education. Before the passage of Public Law 94-142 in 1975, mildly retarded children either were excluded from the normal routine of school activities or were not allowed to attend school at all. Today, educators are legally required to ensure that mildly retarded children receive all the benefits of a public school education in the least restrictive environment. In most instances, this "mainstreaming" mandate means that these mildly retarded students are placed in regular classrooms with special education assistance. The movement from segregation to integration has made the regular educator responsible for the classroom instruction of mildly retarded students.

Since 89% of the estimated 1,000,000 retarded children in the U.S. are classified as mildly retarded, American educators are faced with the formidable challenge of teaching vast numbers of students whose prior school experiences have tended to be a series of failures. The purpose of this fastback is to describe techniques and strategies for teaching the mildly retarded child in the regular classroom. Given the proper guidance and support, the regular educator is fully capable of responding to this challenge. As Hans Christian Andersen so aptly described, ugly ducklings often grow up to become beautiful swans.

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Identifying Mildly Retarded Students

The widespread identification of school children as mildy retarded began in this country with the advent of intelligence testing in 1908. At the turn of the century, the new science of psychometrics was dazzling American scholars with its purported precision and capacity for prediction. A number of prominent psychologists believed that the IQ test could provide a clear-cut measure of permanent intellectual ability. Many social reformers assumed that the ability to predict "feeblemindedness" would allow for control and eventual elimination of genetically inferior citizens. Lewis Terman, the celebrated American psychologist, hailed the publication of the *Stanford-Binet Intelligence Test* as a milestone in social control.

> in the near future intelligence tests will bring tens of thousands of these high-grade defectives under the surveillance and protection of society. This will ultimately result in curtailing the reproduction of feeblemindedness and in the elimination of an enormous amount of crime, pauperism, and industrial inefficiency. It is hardly necessary to emphasize that the high-grade cases, of the type now so frequently overlooked, are precisely the ones whose guardianship it is most important for the State to assume. (1916, pp. 6-7)

From 1924 through the 1930s, a series of immigration and sterilization laws were passed at both federal and state levels with the intent of culling the intellectually inferior from American society.

As time passed, terminology changed and the "feebleminded" were renamed "mildly retarded"; but the change in label did little to promote

understanding or acceptance among educators until after World War II. With the return of disabled veterans and the responsiveness of a grateful American public, new strides in rehabilitation programs fostered the philosophy that it was possible to remediate specific handicaps.

School systems around the country began to provide segregated programs for the mentally retarded, and intelligence tests were used to classify children into tidy categories of intellectual subnormality. Children who scored in the low-middle range on IQ tests were labeled mildly retarded because they were not expected to gain more than rudimentary math and reading skills. But, because school districts were not required by law to educate the mentally retarded, the quality and quantity of special programs fluctuated with local resources and leadership.

During the 1960s, the disclosure that there were retarded children in the families of President Kennedy and Vice President Hubert Humphrey helped focus public attention on the plight of mentally retarded children. Yet the exclusionary policies of many school districts continued to stifle attempts by parents to obtain a public school education for their retarded children. In 1971 the Pennsylvania Association of Retarded Children estimated that there were 50,000 retarded children denied access to a public school education in their state alone. Soon parent advocacy groups began to challenge school districts on the basis that the constitutional rights of their retarded children to equal opportunity were being denied. By 1975 a series of class action suits in several states established the legal precedents needed to justify the passage of P.L. 94-142, the Education for All Handicapped Children Act.

This landmark legislation guaranteed all disabled children the right to a free and appropriate public school education in the least restrictive environment. As school systems across the nation attempted to meet their obligations under the federal mandate, accurate identification of mildly retarded children became essential.

Defining Mental Retardation

Although mental retardation is listed as a disability in P.L. 94-142, it is not defined by the law. Consequently, each state must establish its own criteria for identifying mildly retarded children. The lack of profes-

sional agreement on guidelines for describing and evaluating intellectual competence makes the process of identification all the more difficult. For instance, it is not unusual for a student who is receiving special education services in one state to be denied services after moving to another state because of different definitions of mental retardation.

In 1973 the American Association of Mental Deficiency (AAMD) defined mental retardation as "significantly subaverage intellectual functioning existing concurrently with deficits in adaptive behavior, and manifested during the developmental period [birth to eighteen]." Prior to the 1973 definition, most psychologists identified children who scored 85 or below on an IQ test as mildly retarded. The new definition, with its emphasis on "significant subaverage intelligence," moved the cutoff point for mild mental retardation from one standard deviation to two standard deviations below the mean. This translates into a score of 69-55 on the *Wechsler Intelligence Scale for Children* and 68-52 on the *Stanford-Binet Intelligence Test*. Another crucial change in the new definition was the inclusion of a measure of adaptive behavior to ensure that children were not identified as mentally retarded solely on the basis of intelligence test scores.

In 1980 the American Psychiatric Association defined adaptive behavior as "behavior that is acceptable and appropriate for a student's age and culture, reflecting standards of personal independence and social responsibility." Adaptive behavior cannot be evaluated with a test. Information to assess adaptive behavior must be gathered by interviewing a member of the child's family. There are several standardized adaptive behavior scales, such as the *Vineland Adaptive Behavior Scales* (1981), the *AAMD Adaptive Behavior Scale, School Edition* (1981), and the *Adaptive Behavior Inventory for Children* (1977). Each inventory will give the interviewer a fairly complete picture of a child's social development. Some of the items covered by adaptive behavior scales include: self-help skills (eating, dressing, toileting), communication skills (imitation of sounds, following directions), and social skills (using money, doing chores, playing games). Because different environments, for example, the suburbs and slums, require different coping skills, it is important for interviewers to interpret standardized questions in a flexible manner. While it might be appropriate for a nine-year-old to roam

around a suburban neighborhood unattended, the same behavior may be ill-advised in an urban area.

Many educators and child advocates view the 1973 AAMD definition as an important first step to ensure accurate identification of mild mental retardation. Yet, there is nothing binding about the AAMD definition. Consequently, little progress has been made in devising a consistent national policy for identifying mildly retarded children. In 1980 Huberty reported that of the 41 state departments of education he surveyed, 27 states did not use the AAMD definition, 12 states used a cutoff point higher than 70 on IQ tests, and 15 states did not use any measure of adaptive behavior.

Causes of Mental Retardation

Mild retardation is a complex social problem that is more common among the poor than among other groups. Using normal distribution as a measure, the number of mildly retarded children should be approximately 15 for every 1,000 school children, but the figure is actually much closer to 10 per 1,000 in high-income areas and 50 per 1,000 in low-income areas. While a few scholars still argue that mild retardation is primarily an inherited trait, most researchers attribute causes to an interplay of three sociocultural factors: 1) deprived cultural environment, 2) health-threatening conditions, and 3) school labeling procedures.

Deprived Cultural Environment

The vast majority of mildly retarded children are poor. A 1977 government report to Congress, *Preventing Mental Retardation — More Can Be Done*, stated: "Adverse environmental conditions are considered a major cause of this kind of mental retardation, commonly called 'sociocultural', 'cultural familial', or retardation associated with 'psychosocial disadvantage'." Each of these terms is an attempt to describe how mild mental retardation can result from the complex interaction of inherited intelligence and environmental factors.

Rene Gazaway, in *The Longest Mile* (1969), her study of family life in small Appalachian communities called "hollows," described the slide toward mental retardation that can occur when a family earns less than $2,000 a year, medical treatment is nonexistent, and intra-family pregnancies are commonplace.

> in addition to malnutrition, disease, and isolation, Duddie's Branch is a community of astonishing intellectual impoverishment. Its adult inhabitants not only cannot read, they have no conception of either clock or calendrical time . . . Most adults cannot even make change for money and are often victimized by nearby storekeepers as a result. (p. 52)

Children who grow up in homes that lack the basic necessities of love, comfort, and stimulation are unlikely to thrive and develop in a normal fashion. Living in poverty is a day-to-day struggle for survival, and the children of the poor are usually the first casualties.

One of the most effective interventions to ward off the effects of deprivation is a quality preschool education. A 22-year longitudinal study, *Changed Lives* (Weikart 1984), has documented the growth of 123 poor, black children from Ypsilanti, Mich., who were exposed to an intensive preschool experience. As adults, these preschoolers outdistanced peers who had no preschool experience in terms of high school diplomas, tests of functional competence, and employment. The number of teenage pregnancies was reduced by half, and trouble with the law was reduced significantly. With 35 million Americans now living below the poverty level, early preschool intervention will need to be a national priority in order to decrease the numbers of children classified as mildly retarded in our nation's schools.

Health-Threatening Conditions

Poor children receive the worst health care and are most vulnerable to environmental toxins. Chronically undernourished infants are susceptible to a variety of diseases and nutritional deficiencies that can adversely affect intellectual development. According to recent studies on infant care, 35% of all babies in the United States may be iron deficient, and the condition is most prevalent among the poor. Iron deficiency in the first 18 months produces anemia, which reduces motivation and shortens the attention span of the developing child.

Environmental toxins, especially lead, are another major cause of mental retardation. Of the 12,000 to 16,000 children who are treated annually in this country for lead poisoning, about half become mentally retarded. Lead is a ubiquitous by-product of technology. Older homes

are painted with lead paint, and lead is emitted from car exhausts. Lead is used in making rubber and it is even found in water pipes. Inner-city children who live in dilapidated buildings situated near expressways and industrial plants are particularly vulnerable to lead poisoning.

Lead attacks the nervous system. Even when lead poisoning is not clinically evident, it can still affect children's verbal skills and their ability to concentrate. Low lead levels can produce hyperactivity and distractability. High levels of lead can kill. Every year 200 children in this country die from lead poisoning.

Poor health care for low-income, pregnant women is another factor contributing to mental retardation. Without prenatal care, an expectant mother is three times more likely to have a low-birthweight child (less than 5.5 pounds). Low birthweight is associated with a higher incidence of many developmental problems, including cerebral palsy, epilepsy, autism, and mental retardation. Drug abuse, poor nutrition, smoking, and teenage pregnancy have all been identified as contributing factors to low-birthweight children. Due to their lack of prenatal care, black adolescent women are at risk to have premature or low-birthweight babies. In 1976, 15% of low birthweight babies were children of black teenagers. This figure is double the national average.

In addition to the statistically significant health-related factors, common childhood ailments, such as inner-ear infections, poor vision, and allergies, can impair classroom performance. Because regular classroom teachers are good observers of children's behavior, physicians often rely on their reports to screen potential health-related problems. The best clue that a child may be experiencing a health problem is a change in mood or behavior, such as irritability, apathy, or distractability. Teacher's should not hesitate to request a physical examination if a child seems unable to cope with the daily demands of classroom routines.

School Labeling Procedures

Mild retardation is as often a result of social perception as it is a consequence of economic deprivation or health-threatening conditions. Indeed, the majority of mildly retarded children are never identified until they enter school and fail to meet expectations for academic achieve-

ment. These students look normal and have no detectable physical deficiencies. But, shortly after entry in public schools, they are identified as mildly retarded.

In 1969 the *President's Commission on Mental Retardation* reported that thousands of minority children were being misplaced in classes for the mildly retarded because of poor school performance and low IQ scores. The commission dubbed these children "six-hour retarded" because the only time they were considered retarded was during the school day. At home and in the community they were perceived as normal, but in school they were placed in special classes for the mentally retarded.

Inconsistent measures of intelligence and cultural gaps between teachers and the students they serve are some of the more common explanations given for schools mislabeling children as mildly retarded. There is a tendency for public school officials to classify students who don't fit into the regular school routine as deviant. The history of special education is replete with illustrations of students being segregated from the mainstream of public school life because they did not match prevailing standards of normal behavior, appearance, or achievement. In 1899 Elizabeth Farrell described the students in the first special education class in New York City.

> The first class was made up of the odds and ends of a large school. There were over-age children, so-called naughty children, and the dull and stupid children. They were taken from any and every school grade. The ages ranged from eight to sixteen years. They were the children who could not get along in school. They were typical of a large number of children who even today are forced directly or indirectly out of school; they were the children who were interested in street life; many of them earned a good deal of money in one way or another. While some of them had been in trouble with the police, as a class they could not be characterized as criminal. They had varied interests but the school, as they found it, had little or nothing for them. (p. 297)

Special classes for the mildly retarded have always been disproportionately populated with the children of the disenfranchised. In Elizabeth Farrell's day, it was the Irish and the Italian. Ten years ago, most students in special classes were black. Today, programs for the mildly retarded are overpopulated with Hispanic and Chicano children.

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When mildly retarded students leave school, they again merge into the general population. Yet because these individuals do not have the skills that are needed to develop a self-sufficient lifestyle, their children may in turn be identified as mildly retarded. The vicious cycle of poverty, school failure, and unproductive adulthood can be changed. Mildly retarded students are capable of living productive lives. Researchers have documented many success stories; but without proper educational intervention, the prognosis is dismal. Integration of mildly retarded students into the mainstream of regular education is a necessary first step to develop their skills and potential. Yet integration is not a panacea. Equal opportunity for educational success can only be realized through accurate assessment of educational needs and implementation of purposeful teaching strategies.

Educational Assessment

After a student has been identified as mildly retarded, the next step in the education process is acquiring relevant assessment data. The key criterion for judging relevancy is the usefulness of the information for planning the child's education. In recent years, the use of norm-referenced or standardized tests is in decline because they do not provide enough specific information about individual students. While norm-referenced instruments can indicate a grade level for reading or math or compare a student's achievement to others in terms of percentiles, most of the important questions remain unanswered. How does the student think? Under what classroom conditions does the student learn most effectively? What are the student's interests? What skills does the student possess? What skills does the student need?

Cognitive assessment, criterion-referenced tests, and classroom-based assessment can answer these and other pertinent questions because they offer specific information about how individual students approach learning. Moreover, these evaluation techniques can provide data about student strengths as well as weaknesses. The identification of student abilities highlights the skills the student has acquired and sets a direction for building on those skills. The shift in perspective from viewing the mildly retarded student as a hopeless learner to a student with unique attributes can have a positive effect on teacher expectations and student performance.

Cognitive Assessment

The cognitive theory of Jean Piaget is a useful model for understanding how mildly retarded students perceive and interpret information.

Cognitive assessment using Piaget's theory can determine a student's stage of intellectual development, thus enabling the teacher to make useful observations about how the students' thoughts unfold.

Research with mildly retarded individuals has demonstrated that they proceed through the same four stages of cognitive development as normal children do, only at a slower rate. By identifying the cognitive stage of a retarded student, the teacher can match the demands of the curriculum to the student's thinking style. This match of cognitive development to instruction is crucial for maximizing learning. For example, the student who has not yet developed the ability to manipulate abstract symbols such as numbers will experience persistent failure when confronted with paper-and-pencil arithmetic assignments.

How students deal with a new learning situation is inextricably linked to their stage of cognitive growth. Each of four stages of cognitive development is different. The following summary briefly describes the different modes of learning in each stage of cognitive development.

1. *Sensory-motor.* reflexive behavior, sensory stimulation, play, motoric experiences, imitation
2. *Pre-operational.* trial and error, beginning use of language, intuitive thinking, perceptual reasoning, egocentrism, drawing, role playing, symbolic games, manipulating materials, learning through doing
3. *Concrete operations.* trial and error, verbal learning, memorization, here-and-now orientation, idiosyncratic interests, sequential/linear thinking, relating abstract ideas best to concrete experiences
4. *Formal operations.* symbolic thinking; abstract reasoning; ability to hypothesize; making inferences; contemplating consequences; dealing simultaneously with past, present, and future

A mildly retarded student's stage of cognitive development can be ascertained by three methods. First, IQ scores can be used to predict developmental levels. The child's mental age on an IQ test has a high correlation with normal expectations for learning through the four stages of cognitive growth: sensory-motor (birth to 2), pre-operational

(2 to 7), concrete operations (7 to 11), and formal operations (11 to 15). For example, a nine-year-old with a mental age of five is probably a pre-operational thinker.

A second option for cognitive assessment is to test a child using Piagetian problem-solving tasks such as conservation or transformations. There are several commercial assessment kits that can give a school psychologist or teacher an evaluation of the student's position on the Piagetian continuum. Observations of a student's ability to predict how changes in arrangement of objects will affect absolute values, such as number, mass, and quantity, will pinpoint the stage of cognitive growth and provide valuable insight into how a student deals with learning problems.

The third and perhaps the best, but most time-consuming, approach is to observe a student in open-ended learning situations and then estimate the stage of cognitive growth. This approach requires the ability to record accurately student behavior, and the teacher must be well versed in Piaget's theory. However, it is not unreasonable for an elementary teacher to assume that a mildly retarded child is at the pre-operational stage of development. A high school or middle school teacher could begin observations by assuming the student is a concrete-operational thinker. These estimates can always be verified through formal and informal testing.

Criterion-Referenced Assessment

Criterion-referenced tests are a form of evaluation that rapidly is gaining acceptance. While norm-referenced tests compare students to their peers and rank the comparison in terms of IQ, percentiles, or grade levels, criterion-referenced tests give the teacher information about a student's strengths and weaknesses in specific curriculum areas. A subject, such as reading, is divided into a hierarchy of skills; and the students are tested for their ability to perform each discrete skill. For example, the *Fountain Valley Reading Test* assesses 367 sequential reading skills beginning with visual perception and concluding with comprehension. Knowing a child's specific deficiencies enables a teacher to formulate specific instructional objectives with clear-cut criteria for mastery. A typical criterion-referenced objective is: Given a series of

digraph blends such as *ch, th,* and *sh*, Sam will read each aloud with 90% accuracy. This type of diagnostic/prescriptive assessment satisfies the legal requirement for Individual Education Plans and provides teachers, parents, and students with clear-cut expectations for academic progress. The following list is a brief sample of the many types of criterion-referenced tests available through commercial publishing companies.

Basic Skills

Criterion Test of Basic Skills (1976), published by Academic Therapy Publications. This test is easy to administer and can be used to screen the reading and mathematics skills of students K to 12.

Multilevel Academic Skills Inventory (1982), published by Charles E. Merrill. This test includes more than 300 criterion-referenced objectives in mathematics and reading for grades 1 to 8.

Brigance Comprehensive Inventory of Basic Skills (1982), published by Curriculum Associates. This test is more appropriate for late elementary and secondary students. It includes 185 skill sequences in math, reading, and writing.

Reading

Stanford Diagnostic Reading Test (1976), published by Harcourt Brace Jovanovich. This test is both norm- and criterion-referenced. It is highly recommended for grades 1 to 12.

Mountain Valley Teachers Support System in Reading (1971), published by Richard L. Zweig Associates. This nongraded test measures 367 reading skills.

Diagnosis: An Instructional Aid (1973), published by Science Research Associates. This test evaluates specific skills and provides a systematic plan of instruction for grades K to 6.

Mathematics

Diagnosis: An Instructional Aid in Mathematics (1972), published by Science Research Associates. This test identifies objectives and

materials. Level A is used for grades K to 3, and level B is used for grades 3 to 6.

Inventory of Basic Arithmetic Skills (1983), published by Curriculum Associates. Used for elementary and high school, it tests basic facts and skills.

Key Math Diagnostic Arithmetic Test (1971), published by American Guidance Services. This test is easy to administer. It can be used for grades K to 8.

Spelling

Spellmaster (1976), published by Publishers Test Service. *Spellmaster* includes three tests: diagnostic, irregular words, and homonyms. It can be used for grades K to 8.

Vocational

Social and Prevocational Information Battery (1979), published by CTB/McGraw-Hill. This test requires minimal reading skills and can be used for junior and senior high school students.

Strong-Campbell Interest Inventory (1971), published by Stanford University Press. This test yields profiles about career clusters, interests, and occupational skills. It can be used for high school students.

Singer Vocational Evaluation System (n.d.), published by Singer Education Career Division. This test includes self-contained job tasks in specific career areas, for example, plumbing and electrical wiring. It should be used in high school.

"Life Centered Career Education Matrix" in *Vocational Preparation of Persons with Handicaps* (1982), published by Charles E. Merrill. This includes information on daily living skills, social skills, and occupational preparation. It can be used in high school.

Teachers can also construct their own criterion-referenced tests by dividing a basic skill into subskills and tracking a student's acquisition

of each subskill. Whether using published or teacher-made criterion-referenced tests, teachers should give special attention to the sequence of behaviors measured by the instrument. Students do not always learn in neat, sequential steps, so teachers must be alert to modify the arrangement of instructional objectives.

Classroom-Based Assessment

While attempting to gather information about a student's learning problems, it is easy to forget that education is a two-way street. To focus on only the student in the assessment process tends to obscure the important role that instructional techniques and classroom environments play in determining whether a child learns. Too often the search for pathology in the student leads to solitary test situations that provide no information about student/teacher interaction. If a zoologist wants to learn more about the social relationships of lions, she does not take notes at the zoo. The lions are studied in their natural environment, and all observations include interaction among the various members of the pride.

Classroom-based assessment starts from the premise that the natural setting for a student is the classroom, and no assessment is complete without detailed information about how the student approaches learning in the classroom. The observer is particularly interested in the amount of time allocated for instruction and the amount of time the student is actually engaged in learning tasks.

Anecdotal records, behavior frequency checklists, and time samples, which are brief written "snapshots" of a student's behavior, are valuable tools for observation. When observing and recording behavior, it is essential to describe clearly the student's actions in concrete and specific language. Rather than writing, "John kept pestering me to get my attention during math class," the behavior is clarified by stating, "During math class John talked out of turn five times, and he completed two out of four worksheets."

No assessment is complete without an inventory of the student's perceptions, interests, and learning style. Mary Wood, in *Developmental Therapy* (1975), suggests the following questions as a guideline for

incorporating the student's perspective in selecting materials and ensuring optimum student participation in learning tasks.

About the Student

What interests the student?
What are the student's skills?
What are the student's prior skills and experiences you are building on?
What attracts the student, holds the student's attention?
How long does the student's attention last?
How many variations of a task can the student handle?
What difficulties will one student have that might influence a successful outcome for the student or the group?

About the Material or Activity

What quality does it have to attract the student?
What sensory channels does it require?
What does the student have to do to have a satisfactory outcome?
What previous skills are needed to have a successful outcome?
How much intervention or assistance is required of the teacher?
Will the outcome be something that the student will recognize as meaningful?
Does the activity in some way relate to skills the student will require for self-sufficiency?

Cognitive profiles, criterion-referenced tests, and classroom-based assessment are practical tools for determining the individual student's strengths and weaknesses. The merit of each rests on the ability of the teacher to translate assessment results into effective teaching strategies. In the following section, I describe five teaching approaches that can significantly increase the regular educator's teaching effectiveness with mildly retarded students.

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Teaching Strategies

The most potent factor in the classroom is the teacher's belief that a student is capable of learning. The expectation that a student is a deficient learner or problem child can lead teachers to perceive only the negative aspects of a student's classroom performance. Negative expectations produce negative results. This self-fulfilling prophecy has been observed many times in both research studies and everyday experiences.

Teachers need to be aware of their expectations, particularly when dealing with mildly retarded students. When confronted with a retarded child in a regular classroom, it is natural for the teacher to have doubts about the student's potential. The label alone is both an indictment and verdict. Yet mild retardation is not an unalterable condition. The overwhelming majority of mildly retarded students have no organic brain damage inhibiting their ability to learn. Given high expectations and proper instruction, mildly retarded students can succeed in school and life. Success stories like Helen Keller and Patricia Neal demonstrate that even the most severe disability can be overcome with support and hard work.

Learning is maximized when a teacher can match instructional techniques to individual student needs. Each of the following teaching strategies — cognitive instruction, task analysis, applied behavior analysis, the ecological model, and career education — has been used effectively with mildly retarded students. By incorporating these techniques in the regular classroom, teachers can achieve the kind of successes needed to encourage mildly retarded students to continue in the mainstream of public education.

Cognitive Instruction

Cognitive instruction, based on Piaget's theory of cognitive development, is the process of matching learning activities to thinking abilities. For many teachers, this may mean some adjustments in classroom routines. Piaget's basic premise is: In order for a child to know, she must act. Passive, rote learning that emphasizes the use of workbooks and ditto exercises will not work within a Piagetian framework.

Teachers of mildly retarded students will work most often with students who are in the pre-operational or concrete-operational stages of cognitive development. These students require many opportunities to learn through trial and error. In Piaget's terms, children construct their own knowledge. Consequently, making mistakes in judgment, perception, and reasoning is a vital part of the learning experience. There are, of course, several important distinctions between the pre-operational and concrete-operational thinker.

The pre-operational mildly retarded student is most prevalent in elementary classrooms. This child does not understand logical, cause-and-effect relationships. The child who learns numbers and vocabulary by rote will continue to frustrate the teacher who expects this type of learning to be generalized to new situations. The pre-operational thinker is intuitive, and most judgments are based on how things appear. It is difficult for the pre-operational thinker to understand that vowels, such as *A* or *E*, can be sounded out in ways different from their names.

Instead of learning a list of facts, the pre-operational student needs many opportunities to question, to experiment, and to discover the relationships between objects and events. Lessons should not focus on "right" and "wrong" answers. In cognitive instruction, the teacher questions students about how they derive their answers and encourages them to describe their perceptions. Pre-operational students need concrete learning situations to bridge the gap between their intuition and the logic of the real world. If such content areas as reading and math are taught with an emphasis on memorization and logical sequence, the pre-operational child will encounter major difficulties. Math activities should employ manipulative instructional materials such as Cuisenaire rods and Stern blocks. Reading can be taught by using experience

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stories, recordings of classroom conversation, and vocabulary words derived from student interests. During the pre-operational phase of cognitive development, it is particularly important that the student experience success in order to develop feelings of competence with academic subject matter. By ensuring repeated success, the teacher is laying the motivational foundation that is essential for developing higher-level thinking and learning skills.

The mildly retarded student functioning at the concrete-operational level is found most often in the middle school and high school. This student has developed good memory skills and can follow a sequence of steps to a conclusion. The concrete thinker can manipulate symbols mentally and is capable of performing paper-and-pencil activities. Abstract notions such as morality, justice, and responsibility, which are difficult for the pre-operational thinker to comprehend, begin to acquire significance for the concrete-operational thinker. Learning still proceeds best when abstract skills are reinforced with tangible experiences. High-interest materials, particularly in reading, are assimilated more easily. Learning experiences that focus on here-and-now situations rather than requiring the ability to hypothesize about future events make more sense to the concrete thinker.

Opportunities to experiment with materials, to select topics of interest, and to investigate relationships are important during this stage. Working on projects in small groups and studying about matters that directly relate to their life in the community are the type of learning activities that match the learning style of concrete thinkers. The teacher who frequently uses illustrations, builds on the student's interests, and allows time for independent learning activities will maximize the learning of students at the concrete stage of cognitive development.

Task Analysis

We sometimes forget how complicated it is to learn such skills as multiplying or map reading. Task analysis is a process of breaking down the elements that go into mastering a specific skill and then describing each discrete step in sequential order. Just as a good tennis instructor will break down the movements that go into the backhand stroke into smaller components, so does the teacher who uses task analysis to ar-

range a sequence of small steps that will culminate in the acquisition of a learning objective. By breaking down an instructional objective into subskills and evaluating the student's progress at each level, the teacher is able to pinpoint the learning problem along the way. Task analysis is a kind of verbal roadmap to a specific destination.

However, before a task can be analyzed, the teacher must be specific about the learning objective. While it would be relatively easy to task analyze the skill of using a tape measure, a teacher would quickly despair if the objective was "to learn to read on the fourth-grade level." Therefore, the first step in task analysis is to describe concretely the behavior that is the final objective. Rather than stating that the student will learn to read a graph, the teacher needs to be precise about what is meant by "learn." Will the student be able to draw a graph? Will the student be able to interpret data on a graph orally? Will the student be able to translate information on a graph into written statements? Verbs such as *learn, understand*, and *comprehend* are vague and open to numerous interpretations. A well-written instructional objective will include action verbs that are concrete, specific, and descriptive, such as *mark, underline, write, number*, and *label*. Once the learning behavior is described, the teacher can determine the sequence of steps necessary to achieve the objective. The objective, "John will draw a pie graph of how he spends a day in school," can be task analyzed as follows:

1. John will list his school activities for Monday.
2. John will calculate the amount of hours engaged in each activity.
3. John will write the amount of time spent on each activity.
4. John will calculate the percentage of time spent on each activity.
5. John will draw a circle.
6. John will divide the circle into a section for each percentage.
7. John will label each section with the name of the activity.

Although task analysis identifies each learning step, it does not prescribe how each step should be taught. But because only one concept is presented at a time, task analysis allows a teacher to simplify learning.

Applied Behavior Analysis

Applied behavior analysis is a systematic method for increasing

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desired behaviors and eliminating undesired behaviors. (See fastback 221 *Changing Behavior: A Practical Guide for Teachers and Parents.)* Based on the operant conditioning principles developed by B.F. Skinner and his predecessors, applied behavior analysis can be defined as the process of increasing desired behaviors by providing reinforcements. Reinforcement of behavior increases the probability that the behavior will occur again. By offering a tangible reward, a teacher can help a student to cope with a frustrating learning situation and to persevere and finish a lesson.

Once a target behavior, such as completing five math problems, has been identified, the appropriate reinforcement should be selected. Reinforcements can take three forms: desired activity, social approval, or tangible objects.

Allowing a student to engage in a desired activity after completing an undesirable activity is often a useful approach to modifying behavior. Giving a student 10 minutes to work on a science project, after successful completion of a reading lesson, is a typical example of how providing a desired activity can reinforce learning. However, there are several limitations to this approach. Some preferred activities, such as extra recess time, cannot always be awarded immediately. Also, interest in preferred activities may wear thin over a period of time and new activities must be found. And many preferred activities, like going to the gym to shoot baskets, cannot always be conveniently arranged.

Knowledge of the student and experimentation can help determine if social approval reinforcements will work effectively. Social approval is generally the best kind of reinforcement because it most closely approximates a natural response to a job well done. Social reinforcement can include: expressions (smiling, nodding, and laughing), proximity (pairing a student with a friend, sitting next to the student), contact (patting, hugging, or shaking hands), privileges (being classroom monitor or carrying messages), and words and phrases (praising a student for excellent work or calling parents with a good report.)

Tangible objects such as tokens or poker chips that can be traded for prizes or free time offer several advantages as reinforcements. Because they are concrete, they can be awarded immediately and kept track of conveniently. Tangible objects can be traded for different rewards, thus

allowing more flexibility for individual preferences. Also, there are fewer interruptions in the continuity of classroom activities because tangible reinforcements serve to delay gratification.

When selecting a reinforcement, the key criterion is the student's preferences. Awarding a student gold stars may seem like a good idea because they are inexpensive and easy to administer; but if the student has no interest in gold stars, nothing is gained.

Contingency contracting is another form of applied behavior analysis that, in addition to motivating students, also teaches responsibility. A contract is a written, signed agreement between teacher and student in which both parties agree on specific contingencies for specific behaviors. Because it is a permanent document, it is easily referred to if questions arise about the obligations incurred by either party. The contract should include a clear description of the desired behavior, the specific conditions for the behavior, and criteria for evaluating the student's progress. The contract is an "if-then" statement that allows the teacher and student to form a mutually acceptable pact for classroom performance.

Negative behaviors that interfere with classroom learning can be modified by utilizing applied behavior techniques. The first step is to do a frequency count on how often the negative behavior occurs within a specified time period. The behavior to be modified should then be clearly spelled out for the student. The teacher can decide either to reinforce the student for decreasing the negative behavior or to shape a new behavior. For example, a student who hits other students in the classroom an average of 10 times a day could earn a token for every half-hour interval in which the aggressive behavior does not occur. If the target behavior is yelling answers impulsively during social studies class, shaping the new behavior of raising a hand would be a viable alternative.

Each time the student yells, the teacher ignores that behavior but if the student raises his hand, the teacher rewards the student with a smile and verbal praise.

Although applied behavior analysis is relatively easy to understand and does not require sophisticated training to implement, procedural errors are commonplace. Following are some of the common errors made with the applied behavior analysis approach.

1. Using reinforcements that have no interest for the student
2. Piling on reinforcements so frequently that the student quickly becomes satiated
3. Allowing students to stockpile tangible reinforcements
4. Omitting pre- and post-frequency counts of behavior, making it impossible to evaluate program effectiveness
5. Deducting tangible reinforcements in order to punish students
6. Responding to negative behaviors in such a way that it may actually reinforce the unwanted behavior, for example, arguing with a student

Applied behavior analysis is based on the premise that when positive reinforcement is not happening naturally in a classroom setting, it must be planned. As the student begins to achieve competence and a sense of mastery, the use of tangible reinforcements no longer will be necessary.

Ecological Model

The ecological model focuses on how the student interacts with others within different social systems. Each social system has its own set of expectations and values, and the student must decide how to guide his actions accordingly. Peer groups, the family, and school are significant social systems for students. If a student perceives the school as a negative experience, then withdrawal, truancy, and failure are likely consequences. A teenager who refuses to cooperate in class may be concerned more about how his peer group views him than about how his teachers evaluate his school performance.

When behavior is viewed in terms of the individual and social system adapting to each other, the initial decision in dealing with problem behavior is determining whether interventions should be directed at the student's behavior or the teacher's response. Teachers have different tolerances for specific behaviors. While some teachers become disturbed when students leave their seats without permission, others prefer students to get supplies and exchange information without burdening them with requests for approval. The student who is "hyperactive" in one class may have minimal difficulties in another. Before making judgments about behavior that disturbs their classrooms, teachers must

decide where the problem lies. For example, is it the student who needs to move around, or is it the teacher who needs all students to sit quietly?

From the ecological point of view, effective teachers have a repertoire of responses to disturbing behaviors. Such teacher responses as threats and punishment lock teacher and student into authority conflicts that can damage a developing relationship. When a disturbing behavior occurs in the classroom, the teacher can respond verbally or nonverbally. Verbal responses are more common, but there can be negative reactions. Verbal reprimands can stigmatize a student, and they can reinforce the attention-seeking behavior that the teacher wants to minimize. Planned ignoring, proximity and touch control, and signal interference are nonverbal methods for redirecting behavior without drawing attention to the student.

As the term implies, planned ignoring means not responding to a student's behavior. If a student's disruptive behavior is only a brief episode, it often will quickly and quietly subside if ignored. Proximity control is simply moving around the classroom to sit or stand near a student, which usually will refocus the student's attention on the learning task. In addition to proximity, a gentle tap on the shoulder or an encouraging hug can be a powerful reminder that the teacher is aware of what the student is doing. Signal interference means using a gesture or a smile to interrupt a disturbing behavior without distracting the entire class.

However, the teacher is not the only one who controls behavior. Classes are groups of people interacting in diverse ways, and the group can be a facilitator of individual growth when properly directed. Using group process to help the individual is a common strategy in counseling and social work, but it often is overlooked in classrooms. In a mainstreaming situation, the influence of the group can be harnessed to create a sense of community for the students and teacher.

Teacher-directed discussion groups, in which students have the opportunity to discuss their opinions, can give all participants a sense of ownership in the class. Group decisions about rules for behavior and class projects not only increase motivation, but they also teach students to listen and respect the views of others. A sense of competence and responsibility can be instilled in low-achieving students through peer tutoring. Other group activities such as role playing and circle-time can

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help students to understand better their own feelings while they learn more about the feelings of others. However, group-oriented methods must be monitored carefully. Students often are inexperienced with these activities, and the teacher should be alert to negative side effects such as scapegoating or forming cliques.

The ecological point of view also involves the social system of the total school as well as classroom interactions. Administrative support is essential to mainstreaming efforts. The school administrator sets the tone for how decisions are made, problems resolved, and resources allocated. Mainstreaming has the most chance for success when the principal, special education teacher, regular classroom teacher, and parent work as a cohesive unit. Many key decisions depend on their ability to solve problems together. Breakdowns in their communication or their inability to work together can be just as damaging to mainstreaming efforts as anything that happens in the classroom.

It is not a simple task to teach a mildly retarded student in the regular classroom. The student and teacher must adapt to each other, and each needs the support of the social systems within which they interact. By widening the scope of problem-solving approaches to include the social systems of the classroom, the school, and the community, the ecological perspective provides a comprehensive and reality-centered model for teaching mildly retarded students.

Career Education

Career education offers a broader perspective than traditional vocational education. It encompasses the total life experience of the student. Beyond preparing for a trade, career education aims to develop diverse social skills such as financial management and good work habits. With these skills and some vocational training, the mildly retarded student has a much better chance of achieving a self-sufficient lifestyle.

Career education begins with a detailed assessment of a student's vocational and social aptitudes. For example, the *Strong-Campbell Inventory* (1971) can assess a student's abilities in school subjects, leisure activities, occupational preferences, and personal characteristics. After the assessment is completed, the vocational instructor and special educator work together to design a comprehensive training program.

While the vocational instructor may be training the student in the use of carpentry tools, the special educator can focus on developing job-interviewing skills.

Preparing a mildly retarded student for the world of work requires a realistic assessment of employment opportunities. Several surveys indicate that the food service industries are the primary employers of mildly retarded adults. Hotels, restaurants, and such large institutions as hospitals and schools are the most frequent employers listed in government occupational surveys; next come jobs in building maintenance, retail trade, auto service, and construction.

The mildly retarded often are placed initially in low-paying positions, but their job performance is evaluated by the same standards used for all employees. When a restaurant manager hires a dishwasher, he is concerned with employee reliability, not IQ. Some of the most frequently mentioned job-related attributes employers of the handicapped seek are:

1. promptness
2. neat appearance
3. ability to follow directions
4. finishes jobs
5. responsible
6. able to initiate action
7. hard worker

There are many model programs that prepare mildly retarded students for the world of work. The most effective career education programs are those that either simulate real-life experiences or place the student in direct, supervised work situations. The closer that mildly retarded students are to the concrete realities of life, the more likely they are to understand and assimilate the skills they need to live independently. As an experienced vocational instructor observed, "Many classroom learning problems disappear when the student leaves the 2x4 curriculum, the two covers of a book and the four walls of the school building."

In one training model, students are assigned to mentors at specific work sites. The mentor works with a student for several weeks, guiding

the student through the day-to-day routines that need to be mastered in order to learn a particular trade. For example, a student might be assigned to do an internship in a hospital cafeteria for two afternoons a week. Back at school, the vocational instructor would reinforce specific culinary skills, while the special educator would provide practice in reading food labels and following directions. This system requires communication and cooperation between the three training sites. Mildly retarded students require consistent and specific feedback on their job performance. In many instances, the special educator will take responsibility for coordinating feedback on job performance.

Other vocational programs make use of community advisory councils to evaluate program effectiveness and to monitor local employment needs. Training a mildly retarded student as a machinist serves little purpose in a community that is bereft of heavy industry. Advisory councils made up of local business people not only add credibility to a career education program but also establish a permanent network of potential employers. The local Chamber of Commerce and Jaycees are likely contacts to assist in setting up a cooperative advisory committee to work with a career education program.

A priority in career education is the retraining of vocational instructors to work with handicapped students. Inservice workshops and training affiliations with local special education teacher-preparation programs are two common methods for orienting the vocational instructor to the needs of students with handicapping conditions. Given support and guidance, vocational teachers and special educators, working as a team, are capable of responding to the career needs of mildly retarded students.

Solving Problems in the Classroom

Selecting the appropriate teaching strategy requires that careful consideration be given to such factors as age of the student, available classroom assistance, administrative support, and available materials. Most important, however, is the teacher's willingness to become skilled in the use of each strategy. Applied behavior analysis and task analysis require attention to detail; without a classroom aide to assist in tracking progress, these strategies are difficult to implement. Cognitive instruction is activity based and requires a variety of manipulative materials.

The selection of strategies is not simply choosing one approach over another. There is no one best strategy. In most instances, two or more strategies are combined to achieve specific results. For example, a vocational program might emphasize work-related skills, but the material has to be presented in a concrete fashion that takes into consideration the student's level of cognitive development.

Typical learning problems of mildly retarded students can be divided into four major areas: *motivation* (avoidance tendencies, poor self-concept, high expectancy of failure); *behavioral/emotional* (over-dependency, hyperactivity, distractability); *language* (cultural dialects, reading and writing deficiencies, speech and hearing disorders, lack of verbal skills); and *cognitive* (delayed development, poor memory, inability to generalize concepts, rigid thinking). These learning problems occur in many school children at one time or another. In mildly retarded students the difference is a matter of degree, duration, and intensity. In order to work effectively with these students, regular classroom teachers need first to believe that mildly retarded students can learn and then be

able to solve specific learning problems. The following case studies illustrate how one or more teaching strategies can be meshed to deal with the specific learning problems of mildly retarded students.

Case 1: Nancy

Problem: Delayed Cognitive Development

Nancy is a well-kept 7-year-old with shiny blond hair and bright blue eyes. At birth, she was eight-weeks premature. Her mother is a single parent who works two jobs in order to provide for Nancy and her younger brother and sister. Two years ago in kindergarten, Nancy's teacher expressed concern because Nancy was not keeping pace with the other students. Her attention span was short, she had difficulty sitting still, and she did not follow directions. She was referred to the school psychologist, who diagnosed her problem as mild retardation. After a year in a special class, Nancy was mainstreamed into Ms. Rivera's first-grade class.

Even though she is a cheerful, healthy youngster and enjoys contact with adults and children, Nancy's academic skills are uneven. Her reading vocabulary is limited, and she has difficulty sounding out words. Her math skills are very limited, and Ms. Rivera reports, "Nancy isn't able to apply herself to her workbook exercises and other seatwork. She seemed to grasp number concepts and simple addition in November, but over Christmas vacation she forgot everything."

Nancy's favorite activities are art and music. She enjoys playing with papier-maché and drawing. She particularly likes story time, when Ms. Rivera reads to all the children. She is able to classify objects by color and shape. It is not entirely clear if she understands the meaning of "same" and "different." When shown two glasses of water, one tall and thin, the other short and wide, she said the tall glass had more water because the level was higher. She insisted on her conclusion even after seeing both glasses of water poured equally into the same size glass. When children are lined up by height to go outside, she has difficulty finding her place; and concepts such as "before" and "after" still confuse her.

Teaching Strategy: Cognitive Instruction

Nancy's cognitive development is slower than that of most other children in her class. She is a pre-operational thinker in a classroom that emphasizes symbolic learning activities. Ms. Rivera realized that the use of paper-and-pencil arithmetic assignments did not match Nancy's thinking style. She decided to capitalize on Nancy's interests and to present number concepts in a concrete manner. Ms. Rivera began by having Nancy match popsicle sticks to the number of circles pasted on the front of small juice cans. Soon Nancy was able to grasp number concepts.

Nancy's enjoyment of reading increased when Ms. Rivera began to write one-paragraph stories for her that included her classmates and favorite fictional characters. Spatial and temporal concepts began to make sense to Nancy when Ms. Rivera reinforced lessons with movement games and structured routines. Ms. Rivera capitalized on Nancy's socialization skills by arranging to have 5th-graders visit the classroom and tutor her. After a few months, Ms. Rivera saw that when Nancy worked with materials that took advantage of her developing cognitive skills, both learning and behavior problems diminished considerably.

Case 2: Brian

Problem: Behavior/Hyperactivity

When Brian was six years old, he was diagnosed as mildly retarded and hyperactive. During the past three years, he has been in a special class. With the improvement of his academic skills, it was decided to mainstream Brian into fourth grade. On the first day of class, Brian literally bounced into the room. He was clearly excited, so Mr. Jones, his new teacher, gently guided Brian to his seat. Then, as was his custom on the first day of class, Mr. Jones asked his students to help establish rules for classroom conduct.

As different students raised their hands to give suggestions, Mr. Jones saw that Brian was getting restless. Brian kept turning around to see who was talking. Then he began to shout out ideas for rules, which were mostly some kind of punishment. Within 15 minutes, Brian was

antagonizing the other students and Mr. Jones was getting worried. During the remainder of the day, Mr. Jones noted that Brian was trying; but 10 minutes seemed to be Brian's tolerance level for any activity. Brian's reading was passable; he seemed to understand basic addition, subtraction, and multiplication concepts; but his writing was so messy that it was difficult to read his answers.

What most concerned Mr. Jones was the other students' attitudes toward Brian; his frantic classroom behavior was turning them off. Mr. Jones soon realized that if Brian was to succeed in his class, he was going to have to make friends with his new classmates. Although he was tempted to "sit on" Brian to control his behavior, Mr. Jones resolved to take a couple of weeks to observe Brian's activity in class.

Teaching Strategy: Applied Behavior Analysis

After two weeks of observations, Mr. Jones discovered some important things about Brian's hyperactive behavior. Transition times were most difficult for Brian. His constant talking or interrupting was most frequent in the early morning, after recess, and following physical education. Brian's average attention span for group lessons was 17 minutes, and for independent work 9 minutes. His disturbing behaviors included: talking or yelling out his thoughts on whatever topic was being discussed, impulsively grabbing objects and playing with them, and getting into arguments with other students. Mr. Jones discovered that Brian beamed with delight when he was praised. He also did well in art, science, and other activities that required working with materials.

Mr. Jones selected two target behaviors that he wanted to reinforce. With the assistance of the school resource room teacher, Mr. Jones had Brian's Individualized Education Plan (I.E.P.) amended to include two new objectives: 1) Given a classroom discussion, Brian will contribute his ideas after raising his hand 80% of the time. 2) Given a typical classroom assignment, Brian will work independently for 25 minutes. Mr. Jones decided to begin applied behavior analysis with only these two objectives in order to give time for evaluating Brian's progress.

Because Brian responded well to praise, Mr. Jones ignored his talking out of turn in class. But every time Brian raised his hand, Mr. Jones reinforced the behavior verbally. When discussing the new plan with

Brian's parents, Mr. Jones discovered that Brian was a baseball fan. Mr. Jones set up a reinforcement schedule so Brian could earn a poker chip for every five minutes he persevered independently on an assignment. At the end of the day, Brian received a baseball card in exchange for five poker chips.

Brian was enthusiastic about the reinforcement schedule. However, Mr. Jones was concerned that the rest of the class would feel left out, so he decided to have a class meeting to discuss Brian's difficulties. Mr. Jones was pleased with the students' reaction; they also wanted Brian to do well. After 30 minutes of lively discussion, the class fully supported Mr. Jones' plan.

Within two weeks, Brian accumulated a number of baseball cards, which he traded with classmates at recess. He was raising his hand when he wanted to answer a question, and Mr. Jones could see that Brian gradually was gaining control of his behavior in other situations as well. A frequency count at the end of three months indicated that Brian was talking without raising his hand an average of twice a day, as compared with the original count of 13 times a day. He was averaging 23 minutes on independent written assignments, and his "hyperactive" behavior at other times had decreased significantly.

Case 3: Franklin

Problem: Language/Academics

Franklin is 13 years old. He lives in a run-down tenement with his grandmother, aunt, and three sisters. His father is in prison, and his mother moved to Chicago six months ago to look for work. In the past six months, Franklin has been arrested twice, once for fighting and a second time for loitering.

For the past two years, Franklin has been placed in the special class located in the basement of his elementary school. Since his placement in the "retard class," as Franklin refers to it, his attendance has been poor. He was placed in this class for "slow learners" after he was tested and found to have a 66 IQ. There was no attempt made to get a sense of Franklin's socialization skills because none of the adaptive behavior scales seemed applicable to his situation.

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Both Franklin's attitude and his language bear the unmistakable stamp of life in the streets. Although he is a verbal youngster, it is often difficult to understand his rapid-fire talk. Franklin does well in mathematics, but he grows sullen and rebellious when asked to read. The last time he took a reading test was two years ago, and he scored on the third-grade level. The school psychologist explained to Mr. Walden, his special class teacher, that Franklin had done very poorly on the verbal section of the IQ test but scored higher than average on the performance section.

The other students in the class look up to Franklin. When he saunters into the room wearing his "club jacket," everybody takes notice that Franklin has arrived. Mr. Walden has tried to take advantage of Franklin's leadership skills, but Franklin comes to school so infrequently that it is difficult for Mr. Walden to establish any continuity in his lessons or in his relationship with Franklin.

Teaching Strategy: Ecological Model

In December Mr. Toomey, the principal, decided to have a meeting to discuss Franklin's school situation. The school psychologist said that Franklin's speech was not, in fact, "deficient." He pointed out that linguists describe Franklin's speech as Black Standard English, and that it has its own grammatical structure and syntax, just as white, middle-class speech does. "This is fine," Mr. Walden agreed, "but all the reading materials I use are written in White Standard English, so what do I do?" After a lengthy discussion, it was agreed that magazines, books about mechanics, and comic books could be substituted for traditional texts in Franklin's reading program. It was also agreed to task analyze as many lessons as possible in order for Franklin to experience successes frequently.

The conversation shifted to Franklin's placement in the special class. All three agreed that there was little hope in getting Franklin back to school on a regular basis while he felt stigmatized. Mr. Toomey agreed to approach a sixth-grade teacher who was successful with some other difficult students about the possibility of taking Franklin in his class. Mr. Walden would work with the teacher on a daily basis to monitor lessons and gather reading materials.

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Mr. Walden then suggested that Franklin become a part of the new peer tutoring program Mr. Toomey had established. Every day, Franklin would tutor a fourth-grade student in math.

After the meeting, Mr. Toomey talked with the sixth-grade teacher, who agreed to try Franklin in his class. At the end of the day all four professionals went home committed to the notion that, for Franklin to succeed in school, he would have to feel that school was important and not merely a diversion for when nothing was happening on the streets.

Case 4. Susan

Problem: Motivation

Soon after school began Susan, an eighth-grade transfer student from out of state, was rapidly falling behind her classmates in both math and reading. Her teacher, Mrs. Woodruff, was concerned most with Susan's lack of socialization skills. Susan was painfully shy. On the playground, she kept to herself. In the classroom, she was so quiet that it was easy to overlook her during a lesson. When Mrs. Woodruff asked her a question, Susan seemed to go deeper into her shell by avoiding eye contact and saying, "I don't know."

A review of Susan's school records indicated that she had a history of low achievement. Her parents were divorced, and her mother provided for Susan and her three siblings by working in a semi-skilled job at the local fabric mill. Although she was an attractive girl, Susan was twenty-pounds overweight and always looked disheveled.

When tested by the school psychologist, Susan scored in the mildly retarded range. The psychologist also expressed concern about Susan's lack of motivation and poor self-concept. In the testing situation, Susan kept looking to the psychologist for approval or cues. The psychologist explained that children such as Susan have experienced so much school failure that they have little self-confidence and they expect to fail even before they begin an activity.

Susan was subsequently placed in Mrs. Lane's resource room in the morning for math and reading, and she spent the afternoon with her 8th-grade class for science, social studies, and art. Both Mrs. Lane and Mrs. Woodruff observed that Susan did best in activities that were pro-

duct oriented. For math, Mrs. Lane used high-interest activities such as cooking to teach Susan about measuring, fractions, and problem solving.

Although Susan's progress was encouraging to both teachers, they were concerned about her move next year to high school, where she would have to cope with the increased social and academic demands.

Teaching Strategy: Career Education

Early in May, Mrs. Woodruff and Mrs. Lane met with Mr. Davenport, the career education counselor for Smithtown High School. All three agreed that Susan was a good candidate for a vocational program.

The career education program would help Susan to develop vocational skills and, if successfully completed, would lead to a regular high school diploma. Susan would take a basic skills inventory and an aptitude test in September. After her interests and abilities were determined, Susan would begin her program. Every morning, she would attend regular classes in English, history, and other subjects that she needs for graduation. The special education resource room teacher would assist the regular classroom teachers in designing lessons and evaluating Susan's progress. Susan would spend two periods a week in the Daily Living class, where she would get experience in shopping, housekeeping, cooking, and related practical activities. fternoons would be set aside for vocational training.

The vocational program at Smithtown is primarily community based. Susan's program would be divided into eight-week segments. During each eight-week period, she would spend two afternoons as an intern in a selected work site such as a restaurant, retail store, or hospital. Each site is coordinated with a mentor who demonstrates specific skills, supervises, and evaluates progress. Susan would attend special vocational classes three afternoons a week. Each eight-week class module is matched to the type of community site where the student is placed. For example, during her work experience in a restaurant, Susan's vocational instructor would emphasize food preparation and operation of kitchen equipment. During Susan's next three high school years, she would be mainstreamed into regular vocational classes that matched her interests and abilities.

Mr. Davenport also explained that his responsibilities include helping Susan and other career education students obtain a job after graduation. With this information, Mrs. Woodruff agreed to contact Susan's mother to explain the proposed program and to solicit her input.

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Conclusion

Alfred Binet warned educators to avoid literal interpretations of his intelligence test. He was concerned that some teachers would take the term "IQ" to mean that there was a preordained limit to a student's capacity to learn. Unfortunately, the myth that IQ equals learning potential still persists today among many educators and psychologists.

However, the number of children identified as mildly retarded is steadily decreasing. This change is not the result of a "cure" for mild retardation, nor is it the result of a concerted movement to abandon intelligence testing. Rather, the stigma of the label "mildly mentally retarded" has become so abhorrent to parents and educators that thousands of students who otherwise would be placed in that category are being classified as learning disabled. Despite diverse views about who the mildly retarded are and how they became retarded, the regular educator can be certain that:

1. There is no predictable limit on any student's learning potential.
2. In order for effective teaching to occur, educators need specific and concrete assessment information about individual students.
3. There are several teaching approaches that have proven effective with mildly retarded students. A good match between student learning style and teaching methodology is the key to program effectiveness.
4. Most mildly retarded students are poor, from minority groups, or both. Mild retardation is as much a social dilemma as it is an educational problem.

Within our nation's public school systems, thousands of talented teachers labor to mold the minds of our youth. These classrooms are mini-societies where students learn to measure others based on their ability rather than social class or economic status. The continued integration of mildly retarded children into the mainstream of normal school life is a strong signal that democratic principles can continue to thrive in our public schools.

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Bibliography

Edgerton, Robert B. *Mental Retardation. The Developing Child Series.* Cambridge, Mass.: Harvard University Press, 1979.

Farrell, E.E. "Special Classes in the New York City Schools." *Journal of Psycho-Asthenics* 13, no. 1,2,3, and 4 (1908-1909): 91.

Gazaway, R. *The Longest Mile.* Garden City, N.Y.: Doubleday, 1969.

Houts, Paul, ed. *The Myth of Measurability.* New York: Hart Publishing Company, 1977.

Huberty, T.; Koller, J.; and Ten Brink, T. "Adaptive Behavior in the Definition of Mental Retardation." *Exceptional Children* 46, no. 4 (1980).

Report to Congress by the Comptroller General of the United States. *Preventing Mental Retardation: More Can Be Done.* 7 October 1977.

Sarason, S., and Doris, J. *Educational Handicap, Public Policy, and Social History.* New York: The Free Press, 1979.

Terman, Lewis. *The Measurement of Intelligence.* Boston: Houghton Mifflin, 1916.

U.S. Department of Education. *Sixth Annual Report to Congress on the Implementation of Public Law 94-142: The Education for All Handicapped Children Act.* 1984.

Weikart, D.P. *Changed Lives: The Effects of the Perry Preschool Program on Youths Through Age 19.* Ypsilanti, Mich.: High/Scope Educational Research Foundation, 1984.

Wood, M.M. *Developmental Therapy.* Baltimore: University Park Press, 1975.

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